Music V Workflow

AMPLITUDE SCALE

100 92 71 36 0 -36 -71

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

SAMPLE NUMBER	AMPLITUDE
1	0
2	36
3	71
4	92
5	100
6	92
7	71
8	36
9	0
10	-36
11	-71
12	-92
13	-100
14	-92
15	-71
16	-36
ETC.	

PUNCHED CARDS

DIGITAL COMPUTER

DIGITAL TAPE

FIRST STAGE

NUMBERS SPECIFYING THE INTENSITY, FREQUENCY, ETC. OF EACH SOUND TO BE GENERATED, AND INSTRUCTIONS DEFINING THE OPERATIONS TO BE PERFORMED ON THESE NUMBERS.

A NEW SEQUENCE OF (BINARY) NUMBERS, SPECIFYING THE RELATIVE AMPLITUDES OF EACH SAMPLE OF THE CORRESPONDING SIGNAL.

DURATION IN SECONDS
INTENSITY IN DECIBELS
FREQUENCY IN CYCLES/SECOND

DIGITAL TAPE

DIGITAL-TO-ANALOG CONVERTER

LOW-PASS FILTER

ANALOG TAPE

SECOND STAGE

(A PULSE IN THE FIRST CHANNEL INDICATES A NEGATIVE, NO PULSE A POSITIVE, NUMBER)

A SEQUENCE OF ELECTRICAL PULSES, WITH VOLTAGE AMPLITUDES PROPORTIONAL TO THE NUMBERS ON THE DIGITAL TAPE.

A SMOOTHED ELECTRICAL SIGNAL, WITH DISCONTINUITIES REMOVED

PULSE-PATTERNS ON THE TAPE

PULSE-PATTERNS ON THE TAPE	BINARY NUMBER	DECIMAL EQUIVALENT
	= + 0100110 =	+ 38
	= + 1000111 =	+ 71
	= + 1011100 =	+ 92
	= + 1100100 =	+ 100
	= + 1011100 =	+ 92
	= + 1000111 =	+ 71
	= + 0100110 =	+ 38
	= 0000000 =	0
	= - 0100110 =	- 38
	= - 1000111 =	- 71
	= - 1011100 =	- 92

DIGITAL TAPE

DIGITAL-TO-ANALOG CONVERTER

LOW-PASS FILTER

SAMPLE NUMBERS IN BINARY (PULSE) CODE

PULSES WITH AMPLITUDES PROPORTIONAL TO THE NUMBERS

SMOOTHED SIGNAL

ANALOG TAPE

STANDARD TAPE-PLAYBACK EQUIPMENT

LOUDSPEAKER

THIRD STAGE

FINAL TRANSFORMATION FROM ELECTRO-MAGNETIC SIGNAL TO ACOUSTIC SIGNAL - I.E. SOUND